

PATENT APPLN. NO. 10/522,717
RESPONSE UNDER 37 C.F.R. § 1.116

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IN THE CLAIMS:

1 - 30. (canceled)

31. (previously presented) A production method for an ozone water for use in cleaning semiconductor substrates, comprising adding ethanol or isopropyl alcohol, which suppresses a reduction of the half-life of ozone, to ultra-pure water through a porous polymer membrane having water repellency and subsequently dissolving ozone in the ultra-pure water to which the ethanol or isopropyl alcohol has been added.

32. (previously presented) A production method for an ozone water for use in cleaning semiconductor substrates in accordance with claim 31, wherein said porous polymer membrane is a membrane formed from a tetrafluoroethylene resin.

33. (previously presented) The production method for an ozone water for use in cleaning semiconductor substrates in accordance with claim 31, wherein in an enclosed cell in which a primary chamber is separated from a secondary chamber by interposition of said porous polymer membrane, said ethanol or isopropyl alcohol is supplied to the primary chamber and the ultra

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pure water is supplied to the secondary chamber whereby said ethanol or isopropyl passes through the porous polymer membrane and is added to said ultra-pure water.

34. (previously presented) The production method for an ozone water for use in cleaning semiconductor substrates in accordance with claim 32, wherein in an enclosed cell in which a primary chamber is separated from a secondary chamber by interposition of said porous polymer membrane, said ethanol or isopropyl alcohol is supplied to the primary chamber and the ultra pure water is supplied to the secondary chamber whereby said ethanol or isopropyl passes through the porous polymer membrane and is added to said ultra-pure water.

35. (previously presented) A production method for an ozone water for use in cleaning semiconductor substrates in accordance with claim 31, in which said ethanol or isopropyl alcohol is added to said ultra-pure water in an amount of 5 µg/liter to 1 mg/liter of the ultra-pure water.

36. (previously presented) A production method for an ozone water for use in cleaning semiconductor substrates in accordance

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with claim 32, in which said ethanol or isopropyl alcohol is added to said ultra-pure water in an amount of 5 µg/liter to 1 mg/liter of the ultra-pure water.

37. (previously presented) A production method for an ozone water for use in cleaning semiconductor substrates in accordance with claim 33, in which said ethanol or isopropyl alcohol is added to said ultra-pure water in an amount of 5 µg/liter to 1 mg/liter of the ultra-pure water.

38. (previously presented) A production method for an ozone water for use in cleaning semiconductor substrates in accordance with claim 34, in which said ethanol or isopropyl alcohol is added to said ultra-pure water in an amount of 5 µg/liter to 1 mg/liter of the ultra-pure water.

39. (previously presented) A production method for an ozone water for use in cleaning semiconductor substrates in accordance with claim 31, wherein in the step of dissolving ozone in the ultra-pure water to which the ethanol or isopropyl alcohol has been added, the ultra-pure water to which the ethanol or isopropyl alcohol has been added is supplied to an inside of a

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tetrafluoroethylene resin pipe and ozone gas is dissolved in said ultra-pure water to which the ethanol or isopropyl alcohol has been added by providing an ozone gas atmosphere outside of the tetrafluoroethylene resin pipe.

40. (previously presented) A production method for an ozone water for use in cleaning semiconductor substrates in accordance with claim 32, wherein in the step of dissolving ozone in the ultra-pure water to which the ethanol or isopropyl alcohol has been added, the ultra-pure water to which the ethanol or isopropyl alcohol has been added is supplied to an inside of a tetrafluoroethylene resin pipe and ozone gas is dissolved in said ultra-pure water to which the ethanol or isopropyl alcohol has been added by providing an ozone gas atmosphere outside of the tetrafluoroethylene resin pipe.

41. (previously presented) A production method for an ozone water for use in cleaning semiconductor substrates in accordance with claim 33, wherein in the step of dissolving ozone in the ultra-pure water to which the ethanol or isopropyl alcohol has been added, the ultra-pure water to which the ethanol or isopropyl alcohol has been added is supplied to an inside of a

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tetrafluoroethylene resin pipe and ozone gas is dissolved in said ultra-pure water to which the ethanol or isopropyl alcohol has been added by providing an ozone gas atmosphere outside of the tetrafluoroethylene resin pipe.

42. (previously presented) A production method for an ozone water for use in cleaning semiconductor substrates in accordance with claim 34, wherein in the step of dissolving ozone in the ultra-pure water to which the ethanol or isopropyl alcohol has been added, the ultra-pure water to which the ethanol or isopropyl alcohol has been added is supplied to an inside of a tetrafluoroethylene resin pipe and ozone gas is dissolved in said ultra-pure water to which the ethanol or isopropyl alcohol has been added by providing an ozone gas atmosphere outside of the tetrafluoroethylene resin pipe.

43. (previously presented) A production method for an ozone water for use in cleaning semiconductor substrates in accordance with claim 35, wherein in the step of dissolving ozone in the ultra-pure water to which the ethanol or isopropyl alcohol has been added, the ultra-pure water to which the ethanol or isopropyl alcohol has been added is supplied to an inside of a

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tetrafluoroethylene resin pipe and ozone gas is dissolved in said ultra-pure water to which the ethanol or isopropyl alcohol has been added by providing an ozone gas atmosphere outside of the tetrafluoroethylene resin pipe.

44. (previously presented) A production method for an ozone water for use in cleaning semiconductor substrates in accordance with claim 36, wherein in the step of dissolving ozone in the ultra-pure water to which the ethanol or isopropyl alcohol has been added, the ultra-pure water to which the ethanol or isopropyl alcohol has been added is supplied to an inside of a tetrafluoroethylene resin pipe and ozone gas is dissolved in said ultra-pure water to which the ethanol or isopropyl alcohol has been added by providing an ozone gas atmosphere outside of the tetrafluoroethylene resin pipe.

45. (previously presented) A production method for an ozone water for use in cleaning semiconductor substrates in accordance with claim 37, wherein in the step of dissolving ozone in the ultra-pure water to which the ethanol or isopropyl alcohol has been added, the ultra-pure water to which the ethanol or isopropyl alcohol has been added is supplied to an inside of a

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tetrafluoroethylene resin pipe and ozone gas is dissolved in said ultra-pure water to which the ethanol or isopropyl alcohol has been added by providing an ozone gas atmosphere outside of the tetrafluoroethylene resin pipe.

46. (previously presented) A production method for an ozone water for use in cleaning semiconductor substrates in accordance with claim 38, wherein in the step of dissolving ozone in the ultra-pure water to which the ethanol or isopropyl alcohol has been added, the ultra-pure water to which the ethanol or isopropyl alcohol has been added is supplied to an inside of a tetrafluoroethylene resin pipe and ozone gas is dissolved in said ultra-pure water to which the ethanol or isopropyl alcohol has been added by providing an ozone gas atmosphere outside of the tetrafluoroethylene resin pipe.